

## REMARKS/ARGUMENTS

Claims 1-6 and 13 pending in the application.

A replacement Information Disclosure Statement has been included in this Office Action Response to address Examiner's observations.

Applicants note that no rejection to new claim 13 has been asserted. Applicants respectfully interpret that this claim is then allowable.

Applicants respectfully traverse the rejections raised in the Office Action and ask for Examiner's reconsideration.

### The 1<sup>st</sup> §103 Rejection

Claims 1-3 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tsuji et al.* (U.S. Patent 5,656,550) in view of *Jung et al.* (U.S. Patent 6,333,252).

Applicants have carefully reviewed *Tsuji* and reiterate the cited Figures and description of *Tsuji, et al.*, actually show a structure that is different from that set forth in Applicants' Claims. More particularly, *Tsuji*, show (Figs. 21A - 21C) and describe (column 15, line 63 - column 16, line 13) a structure in which recesses (64) are filled by a first insulating material (51a). This first insulating material is not the same as the encapsulating resin that seals the integrated circuit and provides environmental protection. Further, the first insulating material (51a) is separated from the encapsulating resin (23) by layers (51b, 52), which are deposited subsequent to first insulating material 51a and prior to resin 23. It can be seen that the structure disclosed by *Tsuji*, is different from the structure defined by Applicants' Claims (i.e., the envelope is mechanically anchored to the connection conductors), and does not perform the function of Applicants' claimed structure, which is anchoring the envelope (e.g., encapsulating resin).

It is noted that *Tsuji*, teach that the encapsulating resin portion (23) is separated from the recesses (64) by various layers (51b, 52), and so the encapsulating resin cannot be anchored by those recesses.

Furthermore, a significant feature of *Tsuji* is “pole terminal portions 28A.” “The semiconductor device 21G of this embodiment is characterized in that a mechanism for preventing separation is provided in order to prevent pole terminal portions 28A from being separated from a first insulating layer 51a which constitutes a part of the resin portion 23. In the embodiment shown in FIG. 19A, the mechanism for preventing separation is realized by the pole terminal portions 28A whose cross-sectional shape is a reel shape. FIG. 22A is an enlarged view showing the pole terminal portion 28A. As shown in FIG. 22A, by making a cross-sectional shape of the pole terminal portion 28A a reel shape (cross-sectional area of the central portion being smaller than that of either end), the pole terminal portions 28A have an anchor effect to the first insulating layer 51a, and the pole terminal portions 28A are securely prevented from being separated from the first insulating layer 51a. Since the pole terminal portions 28A are prevented from being separated from the first insulating layer 51a as described above, the reliability of the semiconductor device 21G can be improved. A reference numeral 29 in FIG. 22A refers to a solder formed in the pole terminal portion 28 (col. 15, lines 62-65 – col. 16, lines 1-15).” The packaged device is mounted to its application via these pole terminals

*Tsuji*’s invention meets a need for a particular package in which the pole terminal portions are mechanically made robust with insulating layers. The structures outlined in FIGS. 20A – 20C and FIGS. 21A – 21C show “the preparation of the substrate or the solder bump, which is required in the production of the BGA-type semiconductor, can be omitted and the number of the parts is reduced. Thus, the production cost is reduced. (col. 6, lines 45-49).”

The Office Action’s proposed modification of *Tsuji* with *Jung* does not make up for the deficiency of *Tsuji*. The Office Action concedes that *Tsuji* does not disclose Applicants’ feature of “the bottom surface of the passivating envelope extending as far as the second side of the carrier, but does not cover the second side of the carrier.”

If *Tsuji* were modified by *Jung* to come up with Applicants’ invention, the intent of *Tsuji* would be destroyed. The CCPA and the Federal Circuit have held that when a §103 rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, such a proposed modification is not proper and the *prima facie* case of obviousness can not be properly

made. See *in re Gordon*, 733 F. 2d 900, 221 USPQ 1125 (Fed. Cir 1984). Modifying *Tsuji*'s structure depicted in FIGS. 20A – 20C and FIGS. 21A – 21C essentially would eliminate the pole terminals 28 and thus result in a different package clearly not intended by the inventors.

Case law has established that:

**Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital Systems Inc. v. Monteffiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)**

Furthermore, MPEP §2143.01 provides:

**The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir 1990)**

Therefore, alone or combination, *Tsuji* and *Jung* do not render claims 1-3 of Applicants' invention obvious. Applicants request that the rejections be withdrawn.

#### The 2<sup>nd</sup> §103 Rejection

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Tsuji et al.* (U.S. Patent 5,656,550) in view of *Jung et al.* (U.S. Patent 6,333,252) as applied to claim 1 above, and further in view of *Rostoker* (U.S. Patent 5,340,771)

As discussed *supra*, the combination of *Tsuji* and *Jung* is insufficient in suggesting or teaching Applicants' invention. The addition of *Rostoker* does not overcome this deficiency and make dependent claim 4 obvious.

Therefore, alone or combination, *Tsuji* and *Jung* in view of *Rostoker* does not render claims 4 of Applicants' invention obvious. Applicants request that the rejections be withdrawn.

The 3<sup>rd</sup> §103 Rejection

Claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Tsuji et al.* (U.S. Patent 5,656,550) in view of *Jung et al.* (U.S. Patent 6,333,252) as applied to claim 2 above, and further in view of *Osawa* (U.S. Patent 6,077,727).

As discussed *supra*, the combination of *Tsuji* and *Jung* is insufficient in suggesting or teaching Applicants' invention. The addition of *Osawa* does not overcome this deficiency and make dependent claim 4 obvious.

Therefore, alone or combination, *Tsuji* and *Jung* in view of *Osawa* does not render claim 5 of Applicants' invention obvious. Applicants request that the rejections be withdrawn.

The 4<sup>th</sup> §103 Rejection

Claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Tsuji et al.* (U.S. Patent 5,656,550) in view of *Jung et al.* (U.S. Patent 6,333,252) as applied to claim 1 above, and further in view of *Harada* (U.S. Patent 5,340,771)

As discussed *supra*, the combination of *Tsuji* and *Jung* is insufficient in suggesting or teaching Applicants' invention. The addition of *Harada* does not overcome this deficiency and make dependent claim 4 obvious.

Therefore, alone or combination, *Tsuji* and *Jung* in view of *Harada* does not render claim 6 of Applicants' invention obvious. Applicants request that the rejections be withdrawn.

Conclusion

Applicants believe they have addressed the Examiner's concerns. Claim 1, is allowable and dependent claims 2-6, and 13 are also allowable. Applicants request that a timely Notice of Allowance be dispatched.

Please charge any fees other than the issue fee and credit any overpayments to Deposit Account 14-1270.

Respectfully submitted,

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